

--CROSS-REFERENCE TO RELATED APPLICATIONS

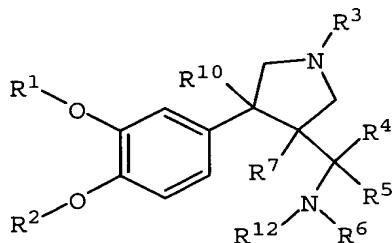
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1/103*  
This application is a continuation of application Serial No. 09/731,591, filed December 7, 2000, now U.S. Patent No. 6,376,489, which claims the benefit of provisional application Serial No. 60/171,023, filed December 23, 1999.--

IN THE CLAIMS:

Cancel claims 1-45.

Add new claims 46-51:

*A*  
--46. A method of inhibiting IL-1 $\beta$  release by monocytes in a mammal comprising administering to said mammal a therapeutically effective amount of a compound having a formula:



wherein R<sup>1</sup> is lower alkyl, bridged alkyl, aryl, heteroaryl, aralkyl, cycloalkyl, a 5- or 6-membered saturated heterocycle, C<sub>1-4</sub>alkylenearyl, C<sub>1-4</sub>alkyleneOaryl, C<sub>1-4</sub>alkyleneheteroaryl, C<sub>1-4</sub>alkyleneHet, C<sub>2-4</sub>alkylenearyloaryl, C<sub>1-4</sub>alkylene bridged alkyl, C<sub>1-3</sub>alkylenecycloalkyl, substituted or unsubstituted propargyl, substituted or unsubstituted allyl, or halocycloalkyl;

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R<sup>2</sup> is hydrogen, methyl, or halo-substituted methyl;

R<sup>3</sup> is selected from the group consisting of C(=O)OR<sup>7</sup>, C(=O)R<sup>7</sup>, C(=NH)NR<sup>8</sup>R<sup>9</sup>, C(=O)NR<sup>8</sup>R<sup>9</sup>, lower alkyl, bridged alkyl, cycloalkyl, haloalkyl, halocycloalkyl, C<sub>1-3</sub>alkylenecycloalkyl, a 5- or 6-membered saturated heterocycle, aryl, heteroaryl, C<sub>1-3</sub>alkyleneC(=O)R<sup>7</sup>, C(=O)-C(=O)NR<sup>8</sup>R<sup>9</sup>, C<sub>1-4</sub>alkyleneOR<sup>7</sup>, C<sub>1-3</sub>alkylenearyl, SO<sub>2</sub>heteroaryl, Het, aralkyl, alkaryl, heteroaralkyl, heteroalkaryl, C<sub>1-3</sub>alkyleneC(=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneC(=O)OR<sup>7</sup>, C<sub>1-3</sub>alkylene-heteroaryl, C(=O)C(=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneC(=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneNH(C=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneNH<sub>2</sub>, and NHC(=O)OR<sup>7</sup>;

R<sup>4</sup> is hydrogen, lower alkyl, haloalkyl, cycloalkyl, or aryl;

R<sup>5</sup> is hydrogen, lower alkyl, alkynyl, haloalkyl, cycloalkyl, or aryl;

R<sup>6</sup> and R<sup>12</sup>, independently, are hydrogen, lower alkyl, aralkyl, SO<sub>2</sub>R<sup>11</sup>, or C(=O)R<sup>7</sup>;

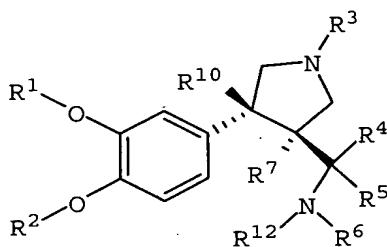
R<sup>7</sup> is selected from the group consisting of branched or unbranched lower alkyl, heteroaryl, a heterocycle, aralkyl, and aryl, and R<sup>7</sup> can be optionally substituted with one or more of RO<sup>8</sup>, NR<sup>8</sup>R<sup>9</sup>, or SR<sup>8</sup>;

R<sup>8</sup> and R<sup>9</sup>, same or different, are selected from the group consisting of hydrogen, lower alkyl, cycloalkyl, aryl, heteroaryl, alkaryl, heteroaralkyl, heteroalkaryl, and aralkyl, or R<sup>8</sup> and R<sup>9</sup> can be taken together to form a 4-membered to 7-membered ring;

R<sup>10</sup> is hydrogen, alkyl, haloalkyl, cycloalkyl, aryl, C(=O)alkyl, C(=O)cycloalkyl, C(=O)aryl, C(=O)-Oalkyl, C(=O)Ocycloalkyl, C(=O)aryl, CH<sub>2</sub>OH, CH<sub>2</sub>Oalkyl, CHO, CN, NO<sub>2</sub>, or SO<sub>2</sub>R<sup>11</sup>;

$R^{11}$  is alkyl, cycloalkyl, trifluoromethyl, aryl, aralkyl, or  $NR^8R^9$ ;  
salts and solvates thereof.

47. The method of claim 46 wherein the compound has the structure:



48. The method of claim 46 wherein the compound is selected from the group consisting of

Methyl (4S,3R)-4-(3-cyclopentyloxy-4-methoxyphenyl)-3-methyl-3-{[benzylamino]methyl}pyrrolidine carboxylate

Methyl (4S,3R)-3-(aminomethyl)-4-(3-cyclopentyloxy-4-methoxyphenyl)-3-methylpyrrolidinecarboxylate

Methyl (3S,4S)-4-(3-cyclopentyloxy-4-methoxyphenyl)-3-methyl-3-{[methylsulfonyl]amino}methyo}pyrrolidinecarboxylate

Methyl (4S,3R)-3-[(acetylamino)methyl]-4-(3-cyclopentyl-oxy-4-methoxyphenyl)-3-methylpyrrolidinecarboxylate

Methyl (4S,3R)-4-(3-cyclopentyloxy-4-methoxyphenyl)-3-methyl-3-[(phenylcarbonylamino)methyl]pyrrolidinecarboxylate

Methyl (3S,4S)-4-(3-cyclopentyloxy-4-methoxyphenyl)-3-methyl-3-[(phenylsulfonyl)amino]methyl]pyrrolidinecarboxylate

Bis{[(4S,3R)-4-(3-cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-carboxymethyl]pyrrolidin-3-yl]methyl}amine

1-[(3S,4S)-4-(3-Cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzyl]pyrrolidin-3-yl]ethylamine

1-[(3S,4S)-4-(3-Cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzyl]pyrrolidin-3-yl]ethylamine

N-[(1-[(3S,4S)-4-(3-Cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzyl]pyrrolidin-3-yl]ethyl]benzamide

N-[(1-[(3S,4S)-4-(3-Cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzyl]pyrrolidin-3-yl]ethyl]benzamide

N-[(1-[(3S,4S)-4-(3-Cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzyl]pyrrolidin-3-yl]ethyl]acetamide

N-[(1-[(3S,4S)-4-(3-Cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzyl]pyrrolidin-3-yl]ethyl]acetamide

3-(S)-(1-Acetylaminooethyl)-4-(S)-(3-cyclopentyloxy-4-methoxyphenyl)-3-methylpyrrolidine-1-carboxylic acid methyl ester

{1-[(3S,4S)-4-(3-Cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzylpyrrolidin-3-yl]ethyl}(phenylsulfonyl)amine

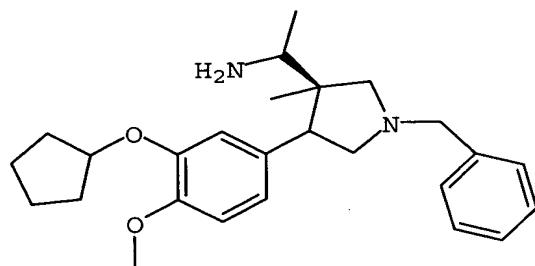
{1-[(3S,4S)-4-(3-cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzylpyrrolidin-3-yl]ethyl}(phenylsulfonyl)amine

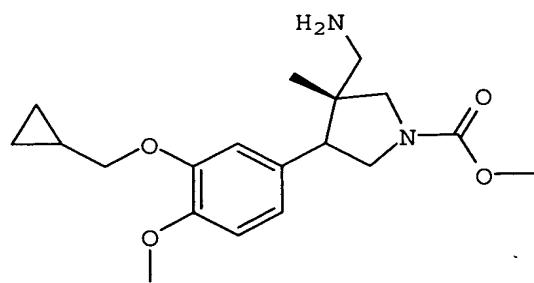
{1-[(3S,4S)-4-(3-Cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzylpyrrolidin-3-yl]ethyl}(methylsulfonyl)amine

{1-[(3S,4S)-4-(3-Cyclopentyloxy-4-methoxyphenyl)-3-methyl-1-benzylpyrrolidin-3-yl]ethyl}(methylsulfonyl)amine, and

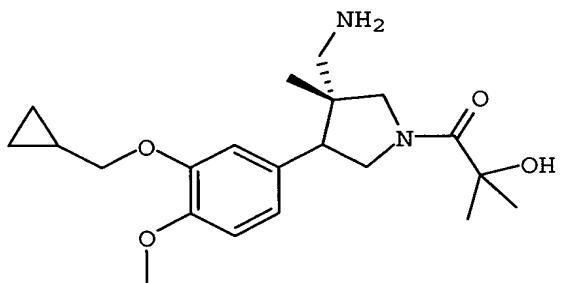
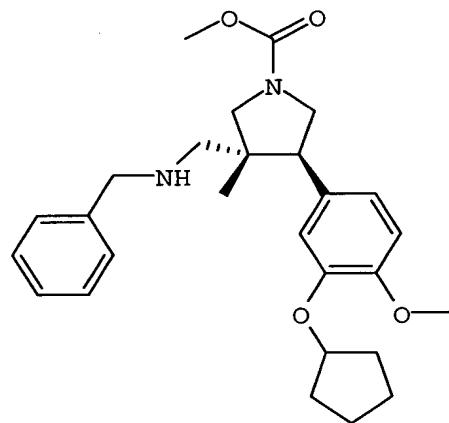
Methyl (3S,4S)-4-(3-cyclopentyloxy-4-methoxyphenyl)-3-methyl-3-[(methylamino)ethyl]pyrrolidine carboxylate.

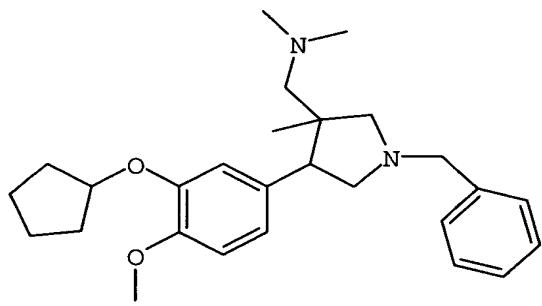
49. The method of claim 46 wherein the compound is the group consisting of:



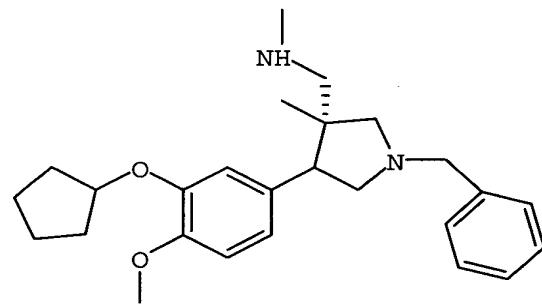
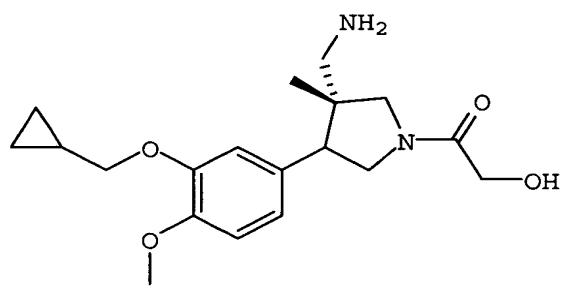


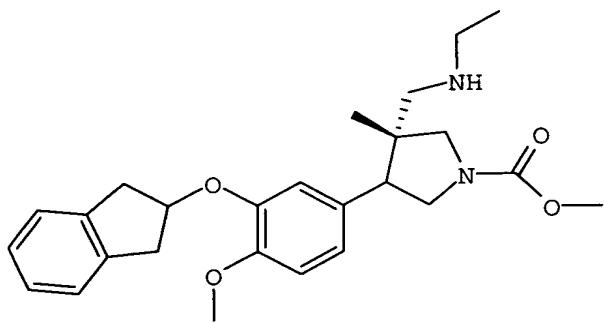
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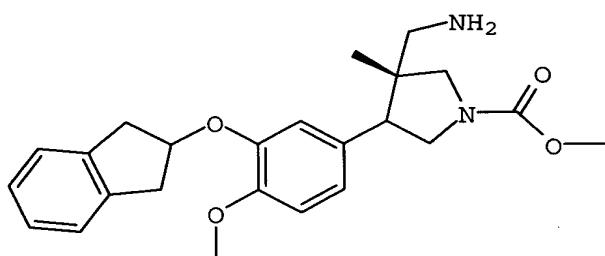
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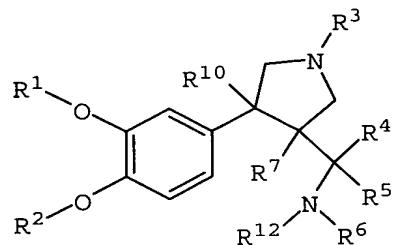


and

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50. A method of inhibiting activation of human T-lymphocytes in a mammal comprising administering to said mammal a therapeutically effective amount of a compound having a formula:



wherein R<sup>1</sup> is lower alkyl, bridged alkyl, aryl, heteroaryl, aralkyl, cycloalkyl, a 5- or 6-membered saturated heterocycle, C<sub>1-4</sub>alkylenearyl, C<sub>1-4</sub>alkyleneOaryl, C<sub>1-4</sub>alkyleneheteroaryl, C<sub>1-4</sub>alkyleneHet, C<sub>2-4</sub>alkylenearyl-Oaryl, C<sub>1-4</sub>alkylene bridged alkyl, C<sub>1-3</sub>alkylenecycloalkyl, substituted or unsubstituted propargyl, substituted or unsubstituted allyl, or halocycloalkyl;

R<sup>2</sup> is hydrogen, methyl, or halo-substituted methyl;

R<sup>3</sup> is selected from the group consisting of C(=O)OR<sup>7</sup>, C(=O)R<sup>7</sup>, C(=NH)NR<sup>8</sup>R<sup>9</sup>, C(=O)NR<sup>8</sup>R<sup>9</sup>, lower alkyl, bridged alkyl, cycloalkyl, haloalkyl, halocycloalkyl, C<sub>1-3</sub>alkylenecycloalkyl, a 5- or 6-membered saturated heterocycle, aryl, heteroaryl, C<sub>1-3</sub>alkyleneC(=O)R<sup>7</sup>, C(=O)-C(=O)NR<sup>8</sup>R<sup>9</sup>, C<sub>1-4</sub>alkyleneOR<sup>7</sup>, C<sub>1-3</sub>alkylenearyl, SO<sub>2</sub>heteroaryl, Het, aralkyl, alkaryl, heteroaralkyl, heteroalkaryl, C<sub>1-3</sub>alkyleneC(=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneC(=O)OR<sup>7</sup>, C<sub>1-3</sub>alkylene-heteroaryl, C(=O)C(=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneC(=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneNH(C=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneNH<sub>2</sub>, and NHC(=O)OR<sup>7</sup>;

R<sup>4</sup> is hydrogen, lower alkyl, haloalkyl, cycloalkyl, or aryl;

R<sup>5</sup> is hydrogen, lower alkyl, alkynyl, haloalkyl, cycloalkyl, or aryl;

R<sup>6</sup> and R<sup>12</sup>, independently, are hydrogen, lower alkyl, aralkyl, SO<sub>2</sub>R<sup>11</sup>, or C(=O)R<sup>7</sup>;

R<sup>7</sup> is selected from the group consisting of branched or unbranched lower alkyl, heteroaryl, a heterocycle, aralkyl, and aryl, and R<sup>7</sup> can be optionally substituted with one or more of RO<sup>8</sup>, NR<sup>8</sup>R<sup>9</sup>, or SR<sup>8</sup>;

R<sup>8</sup> and R<sup>9</sup>, same or different, are selected from the group consisting of hydrogen, lower alkyl, cycloalkyl, aryl, heteroaryl, alkaryl, heteroaralkyl, hetero-

alkaryl, and aralkyl, or  $R^8$  and  $R^9$  can be taken together to form a 4-membered to 7-membered ring;

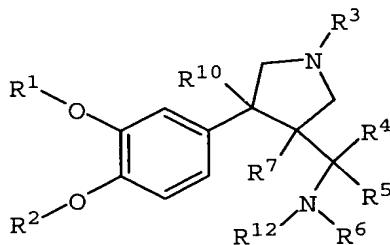
$R^{10}$  is hydrogen, alkyl, haloalkyl, cycloalkyl, aryl,  $C(=O)$ alkyl,  $C(=O)$ cycloalkyl,  $C(=O)$ aryl,  $C(=O)O$ alkyl,  $C(=O)O$ cycloalkyl,  $C(=O)$ aryl,  $CH_2OH$ ,  $CH_2O$ alkyl, CHO, CN,  $NO_2$ , or  $SO_2R^{11}$ ;

$R^{11}$  is alkyl, cycloalkyl, trifluoromethyl, aryl, aralkyl, or  $NR^8R^9$ ;

salts and solvates thereof.

51. A pharmaceutical composition comprising

(a) a compound having a formula



wherein  $R^1$  is lower alkyl, bridged alkyl, aryl, heteroaryl, aralkyl, cycloalkyl, a 5- or 6-membered saturated heterocycle,  $C_{1-4}$ alkylenearyl,  $C_{1-4}$ alkyleneOaryl,  $C_{1-4}$ alkyleneOaryleneheteroaryl,  $C_{1-4}$ alkyleneHet,  $C_{2-4}$ alkylenearylOaryl,  $C_{1-4}$ alkylene bridged alkyl,  $C_{1-3}$ alkylenecycloalkyl, substituted or unsubstituted propargyl, substituted or unsubstituted allyl, or halocycloalkyl;

$R^2$  is hydrogen, methyl, or halo-substituted methyl;

$R^3$  is selected from the group consisting of  $C(=O)OR^7$ ,  $C(=O)R^7$ ,  $C(=NH)NR^8R^9$ ,  $C(=O)NR^8R^9$ , lower alkyl, bridged alkyl, cycloalkyl, haloalkyl, halocycloalkyl,

$C_{1-3}$ alkylenecycloalkyl, a 5- or 6-membered saturated heterocycle, aryl, heteroaryl,  $C_{1-3}$ alkyleneC(=O)R<sup>7</sup>, C(=O)-C(=O)NR<sup>8</sup>R<sup>9</sup>,  $C_{1-4}$ alkyleneOR<sup>7</sup>,  $C_{1-3}$ alkylenearyl, SO<sub>2</sub>heteroaryl, Het, aralkyl, alkaryl, heteroaralkyl, heteroalkaryl,  $C_{1-3}$ alkyleneC(=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneC(=O)OR<sup>7</sup>,  $C_{1-3}$ alkylene-heteroaryl, C(=O)C(=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneC(=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneNH(C=O)OR<sup>7</sup>, C(=O)C<sub>1-3</sub>alkyleneNH<sub>2</sub>, and NHC(=O)OR<sup>7</sup>;

$R^4$  is hydrogen, lower alkyl, haloalkyl, cycloalkyl, or aryl;

$R^5$  is hydrogen, lower alkyl, alkynyl, haloalkyl, cycloalkyl, or aryl;

$R^6$  and  $R^{12}$ , independently, are hydrogen, lower alkyl, aralkyl,  $SO_2R^{11}$ , or  $C(=O)R^7$ ;

$R^7$  is selected from the group consisting of branched or unbranched lower alkyl, heteroaryl, a heterocycle, aralkyl, and aryl, and  $R^7$  can be optionally substituted with one or more of  $RO^8$ ,  $NR^8R^9$ , or  $SR^8$ ;

$R^8$  and  $R^9$ , same or different, are selected from the group consisting of hydrogen, lower alkyl, cycloalkyl, aryl, heteroaryl, alkaryl, heteroaralkyl, heteroaryl, and aralkyl, or  $R^8$  and  $R^9$  can be taken together form a 4-membered to 7-membered ring;

$R^{10}$  is hydrogen, alkyl, haloalkyl, cycloalkyl, aryl,  $C(=O)$ alkyl,  $C(=O)$ cycloalkyl,  $C(=O)$ aryl,  $C(=O)O$ alkyl,  $C(=O)O$ cycloalkyl,  $C(=O)$ aryl,  $CH_2OH$ ,  $CH_2O$ alkyl, CHO, CN,  $NO_2$ , or  $SO_2R^{11}$ ;

R<sup>11</sup> is alkyl, cycloalkyl, trifluoromethyl, aryl, aralkyl, or NR<sup>8</sup>R<sup>9</sup>,

and salts and solvates thereof;

- (b) a pharmaceutically acceptable carrier; and
- (c) a second therapeutic agent having utility in the treatment of rheumatoid arthritis.--